The programme focuses on the mathematics and computing knowledge to enable the modelling of real-life problems, as well as the design, analysis and implementation of algorithms to solve these problems. The programme has a strong practical aspect, through the in-depth study of domains such as Cryptography, Big Data and Predictive Data Analysis.

The programme is a collaboration between Computing Science, Mathematics and Applied Mathematics within our School of Natural and Computing Sciences. It is aimed to fill in an existing gap in the current UK based programmes in theoretical aspects of computing science. The emphasis will not be on software engineering or programming skills but on the mathematical modelling and design of algorithms and their analysis. To enhance the employability and teaching on the programme, you will receive industrial seminars run by external speakers and learn about live projects from industry. Top performing students will also get the opportunity to undertake a work placement.

www.abdn.ac.uk/study
Course aims:
> Understand mathematical tools common in algorithm design such as Linear
  Algebra, Graph Theory and Probability Theory.
> Be able to reduce concrete computational tasks to abstract mathematical
  problems using the tools in the bullet point above.
> Become familiar and be able to implement classical algorithms related to
  commonly occurring abstract mathematical problems.
> Be able to analyse the efficiency, termination, correctness and complexity of
  algorithms.
> Understand the mathematics and algorithmic methods used frequently in:
  - Cryptography, Information Theory and Data Security;
  - Data Mining;
  - Statistics and Predictive Data Analysis methods;
  - Image analysis.
> Become competent in interpreting and describing algorithms and implementing
  them in languages such as Mathematica, Matlab, R, Python, etc.

This is a 12 month MSc, delivered on a full-time basis. The following courses are
studied over three semesters:
> Mathematics for Computing Science
> Algorithmics
> Cryptography and Information Theory
> Data Mining & Visualisation
> Mathematics for Computing Science II
> Algorithmics II
> Statistics and Predictive Data Analysis with Application to Finance
> Computational Models and Solutions
> Project and Dissertation.

The programme is open to all graduates of numerate subjects with sufficient
background in mathematics, such as Computing Science, Engineering, Mathematics
and Physics. Honours degree at 2.1 or equivalent will be a minimum entry
requirement. Applicants that have (or have the equivalent of) a UK Honours at 2:2
may be considered.

For more information, contact
Tel: +44 (0)1224 272655
cpsgrad@abdn.ac.uk
www.abdn.ac.uk/study

For funding information
www.abdn.ac.uk/funding